Abstract

The present invention provides a method and apparatus for performing resistivity measurements for the purpose of geo-steering with 180-degree azimuth resolution. All the measurements represent a complementary set of data acquired in two operational modes. The directional mode providing sensitivity of the received signals to the azimuth characteristics of the formation. The deep mode provides a large depth of investigation for resistivity determination and bed boundary detection. The directional mode can be implemented using one receiving coil placed in between quadruple type transmitter. The deep mode represents either array induction measurements or multiple propagation resisitivity (MPR) measurements that provide high depth of investigation for resistivity determination and bed boundary detection.